

REMARKS

The specification has been amended in response to the objections to the disclosure in paragraph 1 of the Office action. Reconsideration and withdrawal of the objection is respectfully requested.

Claims 1-21, 23-34, 39-57, 59, 62-69, 71-76 are pending and at issue in the application with claims 1, 39, 50, 52, 54, 62, 75 and 76 being independent claims. Claims 1, 39, 50, 52, 54 and 62 have been amended. Claims 22, 35-38, 58, 60, 61 and 70 have been cancelled. Claims 75 and 76 have been added. As a result, 8 independent claims now exist in the application as compared to the 3 independent claims previously paid for, and 67 total claims now exist in the application as compared to the 74 total claims previously paid for. A check in the amount of \$430.00 has been enclosed to cover the fee for consideration of 5 additional independent claims. However, the Commissioner is hereby authorized to charge any deficiency in the amount enclosed or any additional fees which may be required under 37 CFR 1.16 or 1.17 to Deposit Account No. 13-2855. Reconsideration and withdrawal of the rejections in view of the remarks below is respectfully requested.

Claims 39-41, 52 and 54 were objected to as being dependent upon a rejected base claim, but were indicated as being allowable if rewritten in independent form. Claims 39, 52 and 54 have been amended to be independent, including all the limitations of their base claim and all intervening claims. As a result, Applicants submit that each of claims 39-41, 52 and 54 is in condition for allowance.

Applicants respectfully traverse the rejections of claims 1-10, 19-21, 42, 43, 49, 50, 51, 53, 55-57, 59 and 62 as anticipated by Pyotsia et al. (U.S. Patent No. 6,317,701). Applicants further traverse the rejections claims 11-18, 23-34, 44-48, 63-69 and 71-74 as obvious over Pyotsia et al., either alone or in view of one or more of Kunugi (U.S. Patent No. 5,880, 716), Bonaquist et al. (U.S. Patent No. 5,329,443), Kraft (U.S. Patent No. 5,528,510), Campbell (U.S. Patent No. 6,567,718) or Miyagaki et al. (U.S. Patent No. 4,942,514).

Each of claims 1-21, 23-34, 42-51, 53, 55-57, 59, 62-69 and 71-74 recites a system or a method of monitoring an entity, or a plurality of entities, within a process plant that collects

data pertaining to the operation of an entity, and that creates and/or displays a use index representing status information for each entity from the data. The recited use indices relate to one of an entity performance, an entity utilization or an entity variability.

Pyotsia et al. does not disclose or suggest creating or displaying use indices relating to any of performance, utilization or variability from data pertaining to the operation of the entity. While Pyotsia et al. discloses the creation of a control performance index and a maintenance need index based on collected device data (Col. 6, ln. 3-8), these indices are not indicative of the device's performance, the device's utilization or the device's variability. In particular, the control performance index of Pyotsia et al. relates to the operation of a control valve (e.g., a device) from the viewpoint of an industrial process and is used to estimate the effect of the valve on the variability of the process. (Col., 6, ln. 9-12). In other words, the valve data is used to create an index related to the status of another entity (i.e., the process), and not the status of the valve. The control performance index would therefore be unrelated to (e.g., not indicative of) a valve status, such as valve performance, valve utilization or valve variability. In addition, the maintenance need index of Pyotsia et al. relates to the need for maintenance of a device. This maintenance need index is not indicative of the performance of the entity, the utilization of the entity or the variability of the entity. The Office action appears to misinterpret the indices of Pyotsia et al. in this regard.

In particular, neither the control performance index nor the maintenance need index of Pyotsia et al. is the recited performance index. The Pyotsia et al. system and method, discloses a control performance index to estimate how a valve affects the process variability. (Col. 6, ln. 9-12). Therefore, while the control performance index may relate to performance of an entity (e.g., a process), it is created from data relating to another entity (e.g., a device) and reflects how that process is affected by the device. Because the control performance index is created from device data but relates to another entity, as opposed to the device, the control performance index of Pyotsia et al. cannot be created from data pertaining to the operation of the entity while representing status information regarding the same entity, as necessitated by the recited performance index of claims 1-21, 23-34, 42-51, 53, 55-57, 59, 62-69 and 71-74. Further, the maintenance need index of Pyotsia et al. relates to whether or not the entity needs maintenance, rather than the performance of the entity. Pyotsia et al. therefore does not disclose the recited use index relating to entity performance created from

data pertaining to the entity, as recited by claims 1-21, 23-34, 42-51, 53, 55-57, 59, 62-69 and 71-74.

Further, neither the control performance index nor the maintenance need index of Pyotsia et al. is the recited variability index. As discussed above, the control performance index of Pyotsia et al. is created from device data but relates to the status of a different entity. While Pyotsia et al. discloses that the control performance index may be used to estimate the effect of the valve on process variability (Col. 6, ln. 12-13), there is no indication that the control performance index of Pyotsia et al. is actually representative of process variability. Further, although Pyotsia et al. discloses various “error” parameters (Col. 6, ln. 39-51) that may affect the control performance index, none of these error parameters relates to or indicates the variability of the device that generates the error parameters. Pyotsia et al. therefore does not disclose or suggest that the control performance index relates to entity variability, as required by the use index relating to entity variability of claims 1-21, 23-34, 42-51, 53, 55-57, 59, 62-69 and 71-74. As also mentioned above, the maintenance need index of Pyotsia et al. relates to whether or not the entity needs maintenance. The maintenance need index does not relate to the variability of the entity.

Still further, neither the control performance index nor the maintenance need index of Pyotsia et al. is the recited utilization index. Again, the control performance index of Pyotsia et al. is created from device data but relates to the status of a different entity. Also, the control performance index is used to estimate the effect of the valve on process variability, but does not represent utilization of the process, much less utilization of the device within the process. Additionally, the maintenance need index of Pyotsia et al. does not represent utilization. Although Pyotsia et al. discloses an “odometer” (Col. 6, ln. 39-51), the odometer relates to a parameter that may affect the maintenance need index. Pyotsia et al. does not disclose or suggest that the odometer of the device is represented by the maintenance need index. Therefore, Pyotsia et al. does not disclose the recited use index relating to entity utilization as recited by claims 1-21, 23-34, 42-51, 53, 55-57, 59, 62-69 and 71-74.

Because Pyotsia et al. does not disclose a system or a method of creating or displaying use indices relating to performance, utilization or variability from data pertaining to the operation of the entity, as recited by claims 1-21, 23-34, 42-51, 53, 55-57, 59, 62-69 and 71-74, Pyotsia et al. does not anticipate any of claims 1-21, 23-34, 42-51, 53, 55-57, 59, 62-69

and 71-74. Likewise, none of Kunugi, Bonaquist et al., Kraft, Campbell et al. or Miyagaki et al. discloses or suggests a system or method of creating or displaying use indices relating to performance, utilization or variability from data pertaining to the operation of the entity. Therefore, none of Kunugi, Bonaquist et al., Kraft, Campbell et al. or Miyagaki et al., either alone or in combination with Pyotsia et al., renders any of claims 1-21, 23-34, 42-51, 53, 55-57, 59, 62-69 and 71-74 obvious.

Newly added claim 75 recites a method of monitoring the health of an entity that collects data pertaining to the operation of the entity while the entity is in operation and creating a health index from the collected data that indicates the current state of health of the entity as related to a health index scale.

Pyotsia et al. does not disclose or suggest collecting data regarding the operation of an entity and creating an entity health index from the collected data that indicates the health of the entity within a health index scale. Instead, Pyotsia et al. discloses the creation of a control performance index and a maintenance need index. As discussed above, the control performance index is created from the data of one entity but relates to the performance of another entity. The control performance index of Pyotsia et al. is not both created from data for an entity and related to the health of that entity, as recited by claim 75. Further, Pyotsia et al. discloses that the maintenance need index for a valve informs of the need of maintenance of control valves. (Col. 6, ln. 19-20). The maintenance need index of Pyotsia et al. appears to indicate merely whether or not the valve needs maintenance, rather than a variable within a scale indicating the health of the device. For example, although the maintenance need index of Pyotsia et al. could inform a user whether or not the valve needed maintenance, it would not be able to inform a user how close the entity is to needing maintenance. Additionally, the health index as recited in claim 75 does not necessarily relate to whether or not the entity needs maintenance. While the health index as recited in claim 75 indicates the health of the entity, the need for maintenance is determined by a user. For example, in one instance user may determine the entity with a particular health index needs maintenance, whereas in another instance the user may determine that the entity does not need maintenance even if the entity has the same health index. Therefore, Pyotisia et al. does not disclose a health index

pertaining to the health of an entity and indicative of the entity's current state of health as it relates to a health index scale as recited in claim 75.

Likewise, Campbell et al. does not disclose or suggest any of collecting data regarding the operation of an entity while the entity is in operation, and creating a health index indicative of the entity's health as it relates to a health index scale. Campbell et al. discloses a performance model that relates to the performance of a processing tool based on historical data. As such, any output from the performance model of Campbell et al. would relate to the historical performance of the entity, but not the current state of health of the entity, as recited by claim 75.

Because neither Pyotsia et al. nor Campbell et al. discloses or suggests a method of collecting data regarding the operation of an entity, and creating an entity health index indicative of the entity's health as it relates to a health index scale, as recited by claim 75, neither Pyotsia et al. nor Campbell et al. anticipates claim 75 or renders claim 75 obvious. Likewise, none of Kunugi, Bonaquist et al., Kraft or Miyagaki et al. discloses or suggests a method of collecting data regarding the operation of an entity, and creating an entity health index indicative of the entity's health as it relates to a health index scale. Therefore, none of Kunugi, Bonaquist et al., Kraft or Miyagaki et al., either alone or in combination with Pyotsia et al. and/or Campbell et al., renders 75 obvious.

Claim 76 recites a method of monitoring a plurality of entities within a process plant that combines the use indices of lower level entities to provide a use index for a higher level entity, wherein the plurality of lower level entities together comprise the higher level entity.

Pyotsia et al. does not disclose creating a use index for a higher level entity from use indices of lower level entities. Although Pyotsia et al. discloses the creation of a control performance index that is used to estimate the effect a valve has on an industrial process (of which the valve is a part), the control performance index is not created from a use index relating to the valve. Rather, Pyotsia et al. discloses that the control performance index for the industrial process is affected by parameters such as the valve's static error, rate of change in the static error, dynamic error, rate of change in the dynamic error, opening accumulation, load and rate of change in load. (Col. 6, ln. 41-46). These parameters do not, in and of

themselves, constitute a use index, and the control performance index therefore cannot be created from a combination of use indices for lower level entities, as recited by claim 76.

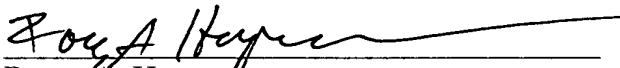
Furthermore, while Pyotsia et al. discloses networking various maintenance management systems which may transmit information on maintenance parameters of different field device types (Col. 2, ln. 65 to Col. 3, ln. 13), Pyotsia et al. does not provide any indication that a use index may be created for a higher level entity from combination of these maintenance parameters for lower level indices, as recited by claim 76.

Because Pyotsia et al. does not disclose or suggest a method that combines the use indices of lower level entities to provide a use index for a higher level entity, as recited by claim 76, Pyotsia et al. does not anticipate claim 76 or render claim 76 obvious.

Applicants respectfully submit that the amendments to the claims and the remarks presented herein have placed the application in condition for allowance. As such, amended independent claims 1, 39, 50, 52, 54 and 62 and independent claims 75 and 76 are believed to be in allowable form. Further, dependent claims 2-21, 23-34, 40-49, 51, 53, 55-57, 59, 63-69 and 71-74, which are dependent upon the aforementioned independent claims are also submitted to be in allowable form.

For the foregoing reasons, reconsideration and withdrawal of the rejections of the claims and allowance thereof are respectfully requested. Should the examiner wish to discuss the foregoing, or any matter of form, in an effort to advance this application towards allowance, the examiner is urged to telephone the undersigned at the indicated number.

Respectfully submitted;

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